Total No. of printed pages = 5

END SEMESTER (REGULAR/RETEST) EXAMINATION, MAY/JUNE-2025

Semester : 6th

Branch : Civil Engineering

Subject Code : Cv-603

ENVIRONMENTAL ENGINEERING AND POLLUTION CONTROL

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Instructions :

(i) Answers to Question Nos. 1-3 are compulsory.

(ii) Answer *all* the questions from Q. Nos. 4 to 9.

1. Fill in the blanks : 1×5=5

   (a) A permeable stratum or a geological formation of permeable materials, which is capable of yielding appreciable quantities of ground water under gravity, is known as an ____.

   (b) The unit of sound level is ____.

[Turn over

(c) In arithmetical method of population forecast, Pn =___+___.

(d) Any substance causing nuisance or harmful effects or uneasiness to the organism than that particular substance may be called as the ____.

(e) Acid rain is an example of ____ pollution.

2. Write True or False : 1×5=5

(a) Environmental pollution can be defined as any undesirable change in physical, chemical or biological characteristics of any component of the environment.

(b) Coagulant is used to kill bacteria.

(c) In slow sand filter, filtering media consists of sand layers about 90 to 110 cm in depth.

(d) A deep manhole is about 9.0m.

(e) If BOD_5 of water is zero, It means that no oxygen is required and thus no organic matter is present.

3. Choose the correct answer : 1×5=5

(a) Screening removes

(i) Floating solids (ii) Chlorine

(iii) Colloidal Particles (iv) All of these

(b) In sugar industry pollution characteristic is

(i) Moderate BOD (i) High COD

(iii) Both (i), (ii) (iv) None of these

(c) The density of garbage usually varies between 450 to ____ kg/m3

(i) 900 (ii) 90

(iii) 990 (iv) None of these

(d) The D.O content of sewage is generally determined by the ____ method.

(i) Thermometer (ii) Winkler's method

(iii) None of the above

(e) If BOD/COD is greater than 0.6 then

(i) Biologically treatable without acclimatisation

(ii) Acclimatisation is needed for biological treatment

(iii) Biological treatment may not be necessary

(iv) None of the above

4. (a) What is meant by the term 'per capita demand' and design period. 2+2=4

(b) What are the different types of intake structures ? 2

(c) Explain with neat sketches the dry intake structures. 3

5. (a) Explain the plain sedimentation process used in a water treatment plant. 5

(b) What are the principles of coagulant ? Explain. 4

Or

2. (a) What is hard water ? 2

(b) What are the classification of filters ? Explain the working process of slow sand filter. 2+5=7

6. (a) What are the qualities of good traps ? 5

(b) What are merits and demerits of traps ? 2

(c) How the cleaning of sewers is done ? 2

Or

(a) What is sullage ? Write the different types of sewers. 1+3=4

(b) Draw the flow diagram of Oil Refinery waste water treatment plant. 5

3. 7. (a) Write the names of tests to determine the physical and chemical characteristics of sewage. 5

(b) What is the necessity and importance of Environmental Sanitation ? 4

8. (a) What are the different sources of solid waste ? 4

(b) Write about methods of disposal of municipal solid wastes. 4

(c) What are the effects of air pollutants ? 2

Or

(a) Explain in brief the methods of treating Industrial wastes waters. 10

9. Write short notes on any *three* : 3×3=9

(i) Deep manhole

(ii) Water borne diseases

(iii) Residual chlorine

(iv) Global Warming

(v) Reuse of solid wastes.